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#4

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/918,036

DATE: 01/31/2002

TIME: 12:53:03

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\01312002\I918036.raw

ENTERED

3 <110> APPLICANT: MADURA, Kiran
 5 <120> TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR THE RAPID PURIFICATION OF
 PROTEASOMES AND

6 METHODS OF USE OF COMPONENTS THEROF

8 <130> FILE REFERENCE: 266/165

10 <140> CURRENT APPLICATION NUMBER: US 09/918,036

11 <141> CURRENT FILING DATE: 2001-07-30

13 <150> PRIOR APPLICATION NUMBER: 60/050,171

14 <151> PRIOR FILING DATE: 1997-06-19

16 <160> NUMBER OF SEQ ID NOS: 17

18 <170> SOFTWARE: PatentIn version 3.1

20 <210> SEQ ID NO: 1

21 <211> LENGTH: 76

22 <212> TYPE: PRT

23 <213> ORGANISM: Homo sapiens

25 <400> SEQUENCE: 1

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31 Val Glu Pro Ser Asp Thr Ile Glu Asn Val Lys Ala Lys Ile Gln Asp

32 20 25 30

35 Lys Glu Gly Ile Pro Pro Asp Gln Gln Arg Leu Ile Phe Ala Gly Lys

36 35 40 45

39 Gln Leu Glu Asp Gly Arg Thr Leu Ser Asp Tyr Asn Ile Gln Lys Glu

40 50 55 60

43 Ser Thr Leu His Leu Val Leu Arg Leu Arg Gly Gly

44 65 70 75

47 <210> SEQ ID NO: 2

48 <211> LENGTH: 77

49 <212> TYPE: PRT

50 <213> ORGANISM: Saccharomyces cerevisiae

52 <400> SEQUENCE: 2

54 Met Ser Leu Asn Ile His Ile Lys Ser Gly Gln Asp Lys Trp Glu Val

55 1 5 10 15

58 Asn Val Ala Pro Glu Ser Thr Val Leu Gln Phe Lys Glu Ala Ile Asn

59 20 25 30

62 Lys Ala Asn Gly Ile Pro Val Ala Asn Gln Arg Leu Ile Tyr Ser Gly

63 35 40 45

66 Lys Ile Leu Lys Asp Asp Gln Thr Val Glu Ser Tyr His Ile Gln Asp

67 50 55 60

70 Gly His Ser Val His Leu Val Lys Ser Gln Pro Lys Pro

71 65 70 75

74 <210> SEQ ID NO: 3

75 <211> LENGTH: 77

76 <212> TYPE: PRT

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77 <213> ORGANISM: Saccharomyces cerevisiae
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81 Met Val Ser Leu Thr Phe Lys Asn Phe Lys Lys Glu Lys Val Pro Leu
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85 Asp Leu Glu Pro Ser Asn Thr Ile Leu Glu Thr Lys Thr Lys Leu Ala
86          20          25          30
89 Gln Ser Ile Ser Cys Glu Glu Ser Gln Ile Lys Leu Ile Tyr Ser Gly
90          35          40          45
93 Lys Val Leu Gln Asp Ser Lys Thr Val Ser Glu Cys Gly Leu Lys Asp
94          50          55          60
97 Gly Asp Gln Val Val Phe Met Val Ser Gln Lys Lys Ser
98 65          70          75
101 <210> SEQ ID NO: 4
102 <211> LENGTH: 79
103 <212> TYPE: PRT
104 <213> ORGANISM: Homo sapiens
106 <400> SEQUENCE: 4
108 Met Gln Val Thr Leu Lys Thr Leu Gln Gln Gln Thr Phe Lys Ile Asp
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112 Ile Asp Pro Glu Thr Val Lys Ala Leu Lys Glu Lys Ile Glu Ser
113          20          25          30
116 Glu Lys Gly Lys Asp Ala Phe Pro Val Ala Gly Gln Lys Leu Ile Tyr
117          35          40          45
120 Ala Gly Lys Ile Leu Asn Asp Asp Thr Ala Leu Lys Glu Tyr Lys Ile
121          50          55          60
124 Asp Glu Lys Asn Phe Val Val Val Met Val Thr Lys Pro Lys Ala
125 65          70          75
128 <210> SEQ ID NO: 5
129 <211> LENGTH: 81
130 <212> TYPE: PRT
131 <213> ORGANISM: Homo sapiens
133 <400> SEQUENCE: 5
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136 1          5          10          15
139 Ile Arg Met Glu Pro Asp Glu Thr Val Lys Val Leu Lys Glu Lys Ile
140          20          25          30
143 Glu Ala Glu Lys Gly Arg Asp Ala Phe Pro Val Ala Gly Gln Lys Leu
144          35          40          45
147 Ile Tyr Ala Gly Lys Ile Leu Ser Asp Asp Val Pro Ile Arg Asp Tyr
148          50          55          60
151 Arg Ile Asp Glu Lys Asn Phe Val Val Val Met Val Thr Lys Thr Lys
152 65          70          75          80
155 Ala
159 <210> SEQ ID NO: 6
160 <211> LENGTH: 83
161 <212> TYPE: PRT
162 <213> ORGANISM: Saccharomyces cerevisiae
164 <400> SEQUENCE: 6
166 Ala Val His Leu Thr Leu Lys Lys Ile Gln Ala Pro Lys Phe Ser Ile

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167 1          5          10          15
170 Glu His Asp Phe Ser Pro Ser Asp Thr Ile Leu Gln Ile Lys Gln His
171          20          25          30
174 Leu Ile Ser Glu Glu Lys Ala Ser His Ile Ser Glu Ile Lys Leu Leu
175          35          40          45
178 Leu Lys Gly Lys Val Leu His Asp Asn Leu Phe Leu Ser Asp Leu Lys
179          50          55          60
182 Val Thr Pro Ala Asn Ser Thr Ile Thr Val Met Ile Lys Pro Asn Pro
183 65          70          75          80
186 Thr Ile Ser
190 <210> SEQ ID NO: 7
191 <211> LENGTH: 76
192 <212> TYPE: PRT
193 <213> ORGANISM: Saccharomyces cerevisiae
195 <400> SEQUENCE: 7
197 Met Ile Val Lys Val Lys Thr Leu Thr Gly Lys Glu Ile Ser Val Glu
198 1          5          10          15
201 Leu Lys Glu Ser Asp Leu Val Tyr His Ile Lys Glu Leu Leu Glu Glu
202          20          25          30
205 Lys Glu Gly Ile Pro Pro Ser Gln Gln Arg Leu Ile Phe Gln Gly Lys
206          35          40          45
209 His Ser Asp Asp Lys Leu Thr Val Thr Asp Ala His Leu Val Glu Gly
210          50          55          60
213 Met Gln Leu Lys Leu Val Leu Thr Leu Arg Gly Gly
214 65          70          75
217 <210> SEQ ID NO: 8
218 <211> LENGTH: 83
219 <212> TYPE: PRT
220 <213> ORGANISM: Saccharomyces cerevisiae
222 <400> SEQUENCE: 8
224 Glu Glu Ile Ala Ala Phe Arg Ile Phe Arg Lys Lys Ser Thr Ser Asn
225 1          5          10          15
228 Leu Lys Ser Ser His Thr Thr Ser Asn Leu Val Lys Lys Thr Met Phe
229          20          25          30
232 Lys Arg Asp Leu Leu Lys Gln Asp Pro Lys Arg Lys Leu Gln Leu Gln
233          35          40          45
236 Gln Arg Phe Ala Ser Pro Thr Asp Arg Leu Val Ser Pro Cys Ser Leu
237          50          55          60
240 Lys Leu Asn Glu His Lys Val Lys Met Phe Gly Lys Lys Lys Lys Val
241 65          70          75          80
244 Asn Pro Met
248 <210> SEQ ID NO: 9
249 <211> LENGTH: 101
250 <212> TYPE: PRT
251 <213> ORGANISM: Homo sapiens
253 <400> SEQUENCE: 9
255 Met Ser Asp Gln Glu Ala Lys Pro Ser Thr Glu Asp Leu Gly Asp Lys
256 1          5          10          15
259 Lys Glu Gly Glu Tyr Ile Lys Leu Lys Val Ile Gly Gln Asp Ser Ser

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260          20          25          30
263 Glu Ile His Phe Lys Val Lys Met Thr Thr His Leu Lys Lys Leu Lys
264          35          40          45
267 Glu Ser Tyr Cys Gln Arg Gln Gly Val Pro Met Asn Ser Leu Arg Phe
268          50          55          60
271 Leu Phe Glu Gly Gln Arg Ile Ala Asp Asn His Thr Pro Lys Glu Leu
272 65          70          75          80
275 Gly Met Glu Glu Glu Asp Val Ile Glu Val Tyr Gln Glu Gln Thr Gly
276          85          90          95
279 Gly His Ser Thr Val
280          100
283 <210> SEQ ID NO: 10
284 <211> LENGTH: 95
285 <212> TYPE: PRT
286 <213> ORGANISM: Saccharomyces cerevisiae
288 <400> SEQUENCE: 10
290 Met Ala Asp Glu Lys Pro Lys Glu Gly Val Lys Thr Glu Asn Asn Asp
291 1          5          10          15
294 His Ile Asn Leu Lys Val Ala Gly Gln Asp Gly Ser Val Val Gln Phe
295          20          25          30
298 Lys Ile Lys Arg His Thr Pro Leu Ser Lys Leu Met Lys Ala Tyr Cys
299          35          40          45
302 Glu Arg Gln Gly Leu Ser Met Arg Gln Ile Arg Phe Arg Phe Asp Gly
303          50          55          60
306 Gln Pro Ile Asn Glu Thr Asp Thr Pro Ala Gln Leu Glu Met Glu Asp
307 65          70          75          80
310 Glu Asp Thr Ile Asp Val Phe Gln Gln Gln Thr Gly Gly Val Tyr
311          85          90          95
314 <210> SEQ ID NO: 11
315 <211> LENGTH: 95
316 <212> TYPE: PRT
317 <213> ORGANISM: Saccharomyces cerevisiae
319 <400> SEQUENCE: 11
321 Met Ser Glu Glu Lys Pro Lys Glu Gly Val Lys Thr Glu Asn Asp His
322 1          5          10          15
325 Ile Asn Leu Lys Val Ala Gly Gln Asp Gly Ser Val Val Gln Phe Lys
326          20          25          30
329 Ile Lys Arg His Thr Ser Leu Ser Lys Leu Met Lys Ala Tyr Cys Glu
330          35          40          45
333 Arg Gln Gly Leu Ser Met Arg Gln Ile Arg Phe Arg Phe Asp Gly Gln
334          50          55          60
337 Pro Ile Asn Glu Thr Asp Thr Pro Ala Gln Leu Arg Met Glu Asp Glu
338 65          70          75          80
341 Asp Thr Ile Asp Val Phe Gln Gln Gln Thr Gly Gly Val Pro Glu
342          85          90          95
345 <210> SEQ ID NO: 12
346 <211> LENGTH: 100
347 <212> TYPE: PRT
348 <213> ORGANISM: Saccharomyces cerevisiae

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Input Set : A:\PTO.VSK.txt

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350 <400> SEQUENCE: 12

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352 Met Ser Asp Ser Glu Val Asn Gln Glu Ala Lys Pro Glu Val Lys Pro
353 1 5 10 15
356 Glu Val Lys Pro Glu Thr His Ile Asn Leu Lys Val Ser Asp Gly Ser
357 20 25 30
360 Ser Glu Ile Phe Phe Lys Ile Lys Lys Thr Thr Pro Leu Arg Arg Leu
361 35 40 45
364 Met Glu Ala Phe Ala Lys Arg Gln Gly Lys Glu Met Asp Ser Leu Arg
365 50 55 60
368 Phe Leu Tyr Asp Gly Ile Arg Ile Gln Ala Asp Gln Thr Pro Glu Asp
369 65 70 75 80
372 Leu Asp Met Glu Asp Asn Asp Ile Ile Glu Ala His Arg Glu Gln Ile
373 85 90 95
376 Gly Gly Ala Thr
377 100

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380 <210> SEQ ID NO: 13

381 <211> LENGTH: 23

382 <212> TYPE: DNA

383 <213> ORGANISM: Artificial Sequence

385 <220> FEATURE:

386 <223> OTHER INFORMATION: Oligonucleotide (reverse) primer #42 used to amplify RAD23

388 <400> SEQUENCE: 13

389 gcgaattcat ggtagctta acc 23

392 <210> SEQ ID NO: 14

393 <211> LENGTH: 25

394 <212> TYPE: DNA

395 <213> ORGANISM: Artificial Sequence

397 <220> FEATURE:

398 <223> OTHER INFORMATION: Oligonucleotide (forward) primer #41 used to amplify RAD23

400 <400> SEQUENCE: 14

401 gcggtaccgc tcggcatgat cgctg 25

404 <210> SEQ ID NO: 15

405 <211> LENGTH: 32

406 <212> TYPE: DNA

407 <213> ORGANISM: Artificial Sequence

409 <220> FEATURE:

410 <223> OTHER INFORMATION: Oligonucleotide (forward) primer #88 used to amplify RAD23

withou

411 t its UbL domain

413 <400> SEQUENCE: 15

414 gcgaattcat gacgaagacc aaactaacag aa 32

417 <210> SEQ ID NO: 16

418 <211> LENGTH: 18

419 <212> TYPE: DNA

420 <213> ORGANISM: Artificial Sequence

422 <220> FEATURE:

423 <223> OTHER INFORMATION: Oligonucleotide primer specific for the promoter of the GAL4 gene

424 . This primer was used to sequence genes from a cDNA library, fr

425 om which RAD23 and other genes were isolated.

427 <400> SEQUENCE: 16

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/918,036

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